

## CLAIMS:

1. An optical data storage medium (20) for recording by means of a focused radiation beam (9) entering the medium through a first plastic/resinous layer (1) which is transparent for the radiation beam (9), said medium further comprising at least:
  - a first recording stack (2), comprising a first recording layer, being present  
5 proximate the first plastic/resinous layer,
  - a second recording stack (4), comprising a second recording layer, said second recording stack (4) being present at a position more remote from the first plastic/resinous layer (1) than the first recording stack (2),
  - a transparent spacer layer (3) between the first and the second recording  
10 stack having a thickness larger than the depth of focus of the focused radiation beamcharacterized in that a first optically transparent thermal barrier layer (b1) is interposed between the first recording stack and the first plastic/resinous layer.
2. An optical data storage medium (20) as claimed in claim 1, wherein the first  
15 recording layer is a write once layer and the second recording layer is one selected from a write once layer, a rewritable layer and a read only layer.
3. An optical data storage medium (20) as claimed in any one of claims 1 or 2,  
wherein the thermal barrier layer has an optical absorption  $k \ll 0.01$  at a wavelength  $\lambda$  of the  
20 focused radiation beam.
4. A dual stack optical data storage medium (20) as claimed in any one of claims  
1 - 3, wherein the thermal barrier layer has a thermal conductivity smaller than 1 W/mK.
- 25 5. An optical data storage medium (20) as claimed in any one of claims 1 - 4,  
wherein the thermal barrier layer has a thickness in the range of 1 - 500 nm.

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6. An optical data storage medium (20) as claimed in claim 5, wherein the thermal barrier layer has a thickness in the range of 5 – 50 nm.

7. An optical data storage medium (20) as claimed in any one of claims 1 - 6,  
5 wherein the thermal barrier layer mainly comprises a material selected from the group of ZnS-SiO<sub>2</sub>, silicon oxynitride and silicon oxide.

8. An optical data storage medium (30) as claimed in any one of claims 1 - 7,  
wherein the medium further comprises at least:  
10 - a second plastic/resinous layer (1') transparent for the radiation beam (9),  
opposite from the first plastic/resinous layer (1),  
- a third recording stack (2'), comprising a third recording layer, being present  
proximate the second plastic/resinous layer,  
- a fourth recording stack (4'), comprising a fourth recording layer, said fourth  
15 recording stack being present at a position more remote from the second plastic/resinous  
layer (1') than the third recording stack (2'),  
- a transparent spacer layer (3') between the third and the fourth recording  
stack having a thickness larger than the depth of focus of the focused radiation beam  
- a second optically transparent thermal barrier layer (b2), interposed between  
20 the third recording stack and the second plastic/resinous layer.